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LYONDEL GARDENS
Morgantown, West Virginia

Leon H. Leonian, Hybridizer

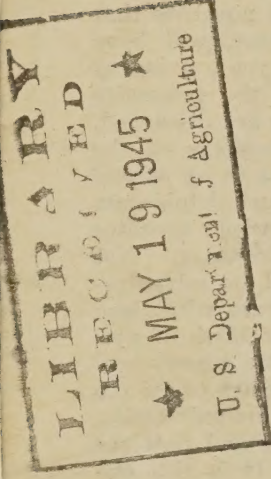
offers to a select clientele TODAY
the masterpieces of TOMORROW:

DELPHINIUMS
DAYLILIES
ORIENTAL POPPIES

All seeds cross pollenzed by hand.
Colors startlingly different and with
a gushing luminosity

1945-46

Sec. 562, P. L. & R.



U. S. Dept of Agriculture
Bureau of Plant Industry
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About the Lyondel Hybrid Delphiniums

MANY STRAINS of delphiniums have been fused to produce the Lyondel Hybrids. Choice seedlings of Vanderbilt, Blackmore and Langdon, Hewitt, Watkin Samuel, Hoodacre, and more recently Reinelt's superb Pacific Hybrids and Wootton's matchless blues have passed through the melting pot. The last two strains are still grown extensively, selected rigidly, and incorporated into the cream of Lyondels.

I am a microbiologist by profession, not a plant breeder. Most of my time is devoted to the nutrition problems of microbes and molds; only a few hours a day are left to play with flowers. I can produce only a limited amount of seed, especially in view of the fact that I insist on making all the crosses myself. After all, crossing is not a mere application of the pollen of one plant to the stigma of another; it is the reflection of the breeder's personality; his ability to evaluate wisely; to select the most likely parents; to visualize in advance the results that lie in the future. For this he must have the instinct that cannot be acquired or purchased. I don't need thousands, or even hundreds of plants to keep me busy, therefore I can afford to choose the parent plants with the greatest of care. *This is my first advantage.* The choicest novelties that bloom in my garden for the first time this year, will have their progenies blooming in your garden next year, *bringing to you tomorrow's delphiniums today.* Once the progenies prove to be better than their parents, the parents are discarded. Thus, the LYONDELS, unhampered by the shortcomings of the old, aggressively move forward and upward. *This is my second advantage.* My soil is poor, the climate harsh, and delphinium mortality high. The survival of the fittest principle operates with ruthless efficiency. *This is my third advantage.* Not being conventional in my methods of breeding, I go adventuring and take my customers with me. I like to share with them the delightful suspense of looking forward to the birth of new and unexpected things. Deliberately I make wide crosses and pass them on to my customers without waiting years to fix the line. This packs each seed with a delightful, heart-palpitating floral adventure. As a result, all kinds of colors and patterns reveal themselves before your fascinated eyes. It is this element of surprise that has distinguished the LYONDELS, and has endeared them to the excitement-loving gardeners. *And that is my fourth advantage.* Any way, the results speak louder than words: although the LYONDELS are not advertised in magazines; although they are not handled and extensively ballyhooed by seedsmen and jobbers, the demand for them is greater than the supply, and each year many new customers come to stay with the old.

How to Grow Delphiniums Successfully

The first thing to do is to find out in which zone of delphiniums you are located. There are four of these: the annual, the biennial, the short-lived perennial, and the true perennial. In Florida and certain parts of the South delphiniums are strictly annuals, dying off after the first display of bloom. In certain other parts of the South they behave as biennials; in most parts of Midwest they are biennial or short-lived perennials, while in North they are true perennials. Once you determine your zone, you will know what to expect and spare yourself all kinds of disillusionment. Having determined this, there remains another important factor: are you located in the fall-sowing or spring-sowing zone? Where seasons are short and July and August are likely to be warm and dry, fall-sowing may be disastrous, and spring should be the time to sow the seeds. Therefore you should purchase your seeds in the fall, put them in tightly stoppered vials, and keep them in the refrigerator. The next spring they will germinate just as well as if they were freshly harvested. But if your season is long enough for the seedlings to grow for at least two months before freezing weather arrives, then you may sow

your seeds about the middle of September when cooler and rainier days arrive. If your season is cool enough, the seeds may be sown the first week in August, rarely earlier. In any case you are strongly urged to sow half of your packet of seeds in the fall, and the other in the spring, particularly if you are in doubt about your zone.

Excessive rains play havoc with young seedlings, therefore seedbeds should be given glass protection against the rains. The glass should be covered with one thickness of burlap to cut down the intensified heat of direct sunshine. A free circulation of air being essential, the glass should be tilted up all the time. The rain will run off the slanting surface without reaching the seedlings, and the air will continue to circulate and thus prevent a dead atmosphere which is conducive to the appearance of all sorts of harmful bacteria and fungi. Light has no effect on the germination of delphinium seeds; let there be light.

Use deep flats to start seedlings, or flower pots if you have but a few seeds. Place gravel in the bottom to afford drainage, and fill up with any good garden soil, preferably one taken from under a well established sod. The soil should be neutral, neither acid nor alkaline. If you are in no position to determine this, you may go on the assumption that any good garden soil is good enough for delphiniums. Add one third sand to two-thirds of soil to improve the texture. Avoid peat moss, sphagnum moss, woods' dirt, wood ashes, leaf mold, manure; *never, never* use any fertilizer; just soil and sand, and you are safe. Place a pinch of Semesan in the seedpacket, shake well, and sow *thickly* right on the surface of the soil, press down firmly by a piece of 2 x 4, and cover with soil not deeper than twice the diameter of the seed. Plunge the flat or the pot part way in water and allow the capilarity to bring the water to the surface of the soil; then remove from the water, allow to drain, and put it in a sheltered place, preferably a cold-frame with glass and burlap protection. Fence the cold-frame against animals. Never allow the surface soil to dry; it is fatal. Overwatering is equally fatal. After the seedlings come up (10 or 15 days), water them with Semesan solution, one level tablespoonful to the gallon. This prevents post-emergence damping-off. Use enough of this solution to moisten the surface soil not more than one-fourth of an inch deep.

Where seeds are sown in the fall, the seedlings may be left undisturbed until the following spring. But if seasons are long, the seedlings may be transplanted into bands and later on into the field. In case of spring sowing, one transplanting prior to fielding out is recommended. Fertilizer and lime applications should be made months ahead of transplanting, or at least two months after; never at the time of planting. In the winter the cold frames should receive hay or straw protection in addition to glass. Early in the spring when the young seedlings begin to push their way up, they should be transplanted into wooden bands, 3 x 3 x 4, kept in the cold frame for five or six weeks, and set out in their permanent place. This reduces transplanting losses to the minimum. In warmer regions a northern exposure is preferable; in cooler regions full sunlight is the most beneficial. If you are located in a region where mildew is prevalent, dust with sulfur. Cyclamen mite may be controlled with rotenone. The symptoms of this pest manifest themselves in the form of a gnarled appearance of growing tips and buds, a purplish black color, and a general stunting. Remove all parts thus affected, and burn. It will be still more effective if you remove all parts above the ground; then spray or dust liberally with rotenone. The second growth will be free from the pest. Do this to all plants after the first and the second blooming; and again late in the fall. This will save yourself a lot of grief. There is nothing you can do against crown rots. Dig up at once any plant thus affected, together with the soil around it, and throw in the fire, otherwise the rot will spread and wipe out all your plants in no time. After the spikes attain some length, they should be supported with bamboo canes six feet long, and successively tied to the very tip of the flowering spike. Older plants do not need winter protection. They should be fertilized at least twice a year, once before each blooming. Smaller amounts of fertilizers applied at more frequent intervals, will give excellent results. Any complete fertilizer will do the work. Broadcast and lightly work in.

This Matter of Failure of Seeds to Germinate

"This failure to germinate is beyond me. In the seed pans I usually sow two lots of seeds. It is reasonable to think that the conditions are almost the same, yet I often find that one lot germinates excellently, while the other is very poor." Thus writes to me Mr. C. Reg. Wootton, a prominent English breeder who has made delphiniums his hobby for decades. This has been my own experience, too, and that of many others like me. But some of my customers think that when the seeds fail to germinate, I have sold them old or worthless seed. Often in the same mail I receive a letter from one customer who reports no germination, while another says that germination was 100 per cent. (The same seed, coming from the same container, mind you). One man writes that Pacific Hybrids gave 100 per cent germination, the LYONDELS none; another writes that the LYONDELS germinated 100 per cent, while the Pacific Hybrids failed to come up. And all the while my own seeds, and the seeds of the Pacific Hybrids sown in my own cold frame have come up thicker than the proverbial fleas on the hound dog's back. Usually when a customer reports no germination, I send him another packet of the same seed. This time he comes back enthusiastically and tells about 100 per cent germination. The seed was the same, but the conditions had changed. So, my friends, please do not blame my seeds, just as I do not blame you for your failures. If you are nice about it, I will make replacements if I can; if you are nasty, the heck with you; you will get no replacements and no literature from the LYONDEL GARDENS. This seed replacement is not an obligation on my part, merely a friendly gesture. In view of the fact that I always run short of seeds and have to return many orders, it means a financial loss to me. I value the good will of the *right sort* of customer more than his money. The *wrong sort* of customer is invited to go jump in the lake. I firmly believe that a person who loves flowers is fundamentally honest and will not take advantage of this friendly gesture of mine. Should there be too much abuse, however, I shall refuse to make any replacements whatever.

What Do Others Say?

The unsolicited letters, from which the following excerpts are taken, were received last year:

I grow the best varieties of delphinium which can withstand our rigorous climate. My favorite haunt during July and August is that part of the garden where your delphiniums are growing. All my visitors too go in raptures. *Mayne Reid, Alberta, Canada.*—Delphiniums from your seed have grown 7-8 feet tall; gorgeous flowers too. They were the talk of our flower show. *Mrs. Ronald MacDonald, Darien, Conn.*—I have bought delphinium seeds from you for 13 successive years, and here I am back again. This should be sufficient testimonial. *Thomas A. Inch, West Hartford, Conn.*—At our annual delphinium show I secured 10 firsts, 7 seconds, 2 thirds, 4 honorable mention, and the best spike in the show. This is the highest individual award ever made. The majority of these plants came from your seeds. *E. P. Essley, Chicago, Ill.*—Mr. Essley walked off with most of the blue ribbons, but there was one class, deep self colors, in which I took first over Mr. Essley. This plant came from your seed. *Mrs. Geo. J. Vasumpaur, Western Springs, Ill.*—Your delphiniums are still tops with me. *Northern Dahlia Gardens, Northbrook, Ill.*—I have grown delphiniums for many years, but never any like yours grown in the garden of my neighbor. *F. M. Wheeler, Evanston, Ill.*—Your last years seeds germinated 100 per cent and the flowers were magnificent. *Jesse L. Strauss, Glencoe, Ill.*—In our local flower show I won two blue ribbons with your delphiniums. *John Hansen, Davenport, Iowa.*—Your delphinium seeds sown last summer produced beautiful spikes, all with double flowers. *Mrs. A. G. Alden, Minneapolis, Minn.*—I am proud of the plants I raised from your last year's seed. Two stalks measured 79 inches, with 42 inches in flower. Your whites were lovely, large, full flowers, almost as large as hollyhocks. *E. Guenter, Butler, N. J.*—The

LYONDEL seeds produced the most magnificent plants and flowers we have ever seen; glamour girls of delphinium family. *Ethel C. House, Naples, N. Y.*—Your seeds produced some very beautiful plants. One of them had soft orchid flowers over three inches across. *Fred E. Collins, Watertown, N. Y.*—I have had seeds from you for a number of years, and always with the greatest of satisfaction. The bloom this year is better than ever. Fully 70 per cent of the whites gave flat, wide-open florets over three inches across. *H. E. Wilson, Granville, N. Y.*—From your seeds I have had a goodly number of plants with three inch flowers, and a wonderful color selection. *T. A. Lentz, Youngstown, O.*—We used to think that the earlier LYONDELS were something to rave about, but the last lot tops them all. *L. D. Rich, Mechanicsville, Pa.*—My delphiniums from your seeds are in bloom, and all of them are outstanding. The winters here are very harsh, but your seedlings came through very well. *D. W. Bratt, Racine, Wisc.*—From your seed I produced the best delphiniums that the public had ever seen. *E. Winkel, Clintonville, Wisc.*—The LYONDELS are still tops so far as colors, shades, and size are concerned. *Rev. Ph. Hartwig, Hartland, Wisc.*—My exhibit of delphiniums from your seeds was the sensation of the local flower show. I got a blue ribbon and the honor of the best exhibition of the entire show. *Mrs. C. L. Weis, La Crosse, Wisc.*

NOW OBEY THAT IMPULSE—

Seed Offerings for 1945-46

1. **BLUE-MAUVES:** The outer sepals sky blue, the inners soft mauve. Or the two colors may be charmingly blended. Golden yellow eyes, brown eyes, black eyes lavender eyes, large and prominent; or there may be no eyes. Enormous flowers and enormous, well shaped spikes are here. The architecture of the spike reaches its perfection in this group.
2. **SAPPHIRE-PURPLES:** The colors are intense, vivid, sparkling, full of a pagan luminosity. The outer sepals are deep blue, the inners royal purple. Or the two colors may be blended, fused, with a mosaic of patterns rarely seen. White eyes, yellow eyes, brown eyes, black eyes, beautifully matching or contrasting, are strikingly displayed by the huge flowers and spikes.
3. **ORCHIDS:** Self colors in various soft and clear shades of orchids; delicate blushes on white background; smokies of infinite charm, and many tints impossible to describe but easy to fall in love with. Big, very big flowers, perfectly formed; broad and circular, as well as narrow, aster-like, with matching or contrasting eyes. To see these is to be captivated for life.
4. **ROYAL PURPLES:** Scintillating, regal colors, absolutely self. Deep orchid, plum purple, bluish purple, with white eyes for startling contrast, with brown eyes, with golden eyes, or with no eyes at all. Large, beautifully formed flowers on spikes of perfect architecture. A rippling luminosity and a durable satisfaction come with this group.
5. **BUES:** Soft sky blues, ultramarine blues, blues of all shades possessing a purity of color that was only a dream but few years ago. Individual flowers satisfactorily large; spikes long and graceful.
6. **SNOW-WHITES:** Here I offer you whites that are truly masterpieces. Individual flowers up to 3¾ inches across. Broad sepals; flat, circular flowers; beautiful eyes in white, in honey color, in black, in brown, in gold. The substance of the sepals is very heavy, and the colors the purest white.
7. **MIXTURES:** If you need only one packet of seeds, choose this. It contains all the colors described above. *The quality is absolutely the same.*

Prices

All seeds \$2.50 per packet. Cash with order. No C.O.D. orders.

Join the *American Delphinium Society*

and see the latest in the world of delphinium. Dues \$2.00 per year. Stanley Ohala, secretary, 5406 McVickers Avenue, Chicago, Ill.

About the Lyondel Hybrid Daylilies

I sell seeds only. My seedling plants and named varieties are handled by Wayside Gardens, Mentor, Ohio. I am offering seeds, cross pollenized by hand, to advanced day-lily fanciers, and to gardeners advanced in their taste. To them I bring tomorrow's daylilies today. Even in their formative period the LEONIAN daylilies were ahead of their time. Mr. T. A. Weston, the well known editor and horticultural authority has the following to say in *Herbertia*, the 1942 Yearbook of the American Amaryllis Society: "*I obtained a packet of hybrid hemerocallis seeds from Dr. Leonian several years ago and raised some thirty plants, all but one being red and better color than any of the named sorts I had seen up to that time, ranging from bright crimson to chocolate maroon.*" In the 1941 issue of *Herbertia* Mr. Wyndham Hayward, then the secretary of the American Amaryllis Society, has this to say in connection with the Second National Daylily Show: "*Of special interest was a group of three flowers exhibited by Mr. Hayward for Dr. Leon H. Leonian. These were early seedlings from Dr. Leonian's collection, and each received a First Class Certificate. They were given provisional exhibition names of 'Cherry,' 'Dr. Leon' and 'Cerberus.' Cherry was the clearest red in the show, and Dr. Leon the best pink. Cerberus was a huge flower, mahogany black in color, with lighter throat and edges.*" When at random I picked about a dozen plants from a collection of two hundred and sent them to Mr. Hayward, I had no idea that he was going to enter them in the show. Yet, three seedlings, not the best by a long-shot, won top honors against stiff competition. Had I named these seedlings then, they would have been ready to be placed on the market now. Thus I would be introducing as novelties some ancient things with grey whiskers. But I did not even keep them. The rarest things that I am using as seed or pollen parents are new as tomorrow's news; some are blooming for the first time this year, and the majority are not older than two blooming seasons. Vegetative propagation is very slow in daylilies; by the time there are enough colors of any given variety to supply the market, the *new* variety is at least eight years old, and therefore six or seven years behind my own seedlings. Tremendous advances can be made in six years. And while other breeders wait until their choice varieties multiply before placing them on the market, I make my newest things available to my customers immediately. This is the reason why by growing your plants from my seeds you will have the daylilies of TOMORROW TODAY. Otherwise I am neither a magician, nor do I possess any secret formulae. I just have a passion for colors, deep, clear, brilliant, different colors. I am not satisfied with just any kind of red, or maroon, or pastel shades. They must have life, sparkle, depth of color, freedom from mudiness: they must be to the eye what a perfect symphony is to the ear. Toward that goal my daylilies have been pushed and are being pushed vigorously and enthusiastically, so that today even the most case-hardened daylily fan will find endless thrills in my seedlings.

How to Grow Daylilies from Seed

Seeds may be sown either in the fall or in the spring. Fill the flats or the pots with rich garden soil, and plant the seeds. In about ten days or two weeks the seedlings will be up. However some of the seeds will remain dormant for months or even for a year, therefore the soil should not be discarded too soon. Upon the approach of winter months, the flats or the pots should be taken indoors, to a sunny window or to a

greenhouse. If such facilities are lacking, it is best to delay the sowing of the seeds until the following spring because some of the seedlings might not be able to withstand the severe winters of some parts of our country. This applies only to the young, tender seedlings, as the mature plants can tolerate much cold. If allowed to grow through the winter months, the seedlings will become quite husky. By early spring they may be transplanted to wooden or paper bands, set out in the cold frame to harden and to establish themselves, and finally transplanted to their permanent place. Some may bloom the same year, but usually it takes two years from seed for the blossoms to appear. If sown in the spring, the seedlings should not be disturbed until the following spring; but where winters are mild, they may be transplanted in the fall.

Seed Offerings for 1945-46

1. **THE RED GROUP:**—included here are all shades of red from deepest, darkest red to scarlet, ruby, cherry, and deep rose. No muddy colors, no brownish or fulvous cast are present in the parent plants. And while hybrids should not be expected to breed true, there will be many seedlings as good as, and even better than the parents. There are many "red" *hemerocallis* now on the market, glowingly and extravagantly described, but in reality there are very few REDS. I bring to you vivid, joyous, dazzling colors that will ripple and splash against your happy eyes. Also there will be a great many forms of flowers: broad sepals and petals opening flat and circular; or funnel shape, *amaryllis*-like; and long, narrow sepals and petals like the flowers of gigantic azaleas, several of them opening together in one cluster. There will be large flowers and small ones; tall scapes and short scapes, and all the gradations in between. All these apply to the other colors as well.

2. **THE MAROON GROUP:**—maroons so dark as to seem black; wine purple, plum purple, mulberry, old rose, and all intermediate shades are here. Rich, he-man colors, intoxicating and irresistible.

3. **PASTEL SHADES:**—the most unusual colors and color combinations are here. Softest, glowing, silvery salmons, pinks, lavender, peach blush, light rose, raspberry pink, sunset-on-clouds shades, lilac and deep cream combinations, self colors, bicolors, mixed colors, fused colors, and many soft delicate tints that cannot be described by mere words. See them, own them, and rejoice.

4. **THE MIXED GROUP:**—this is a mixture of the foregoing three color groups, and should be preferred by those who intend to purchase but one packet of seeds.

The Price of Seeds

Thirty seeds for \$2.50. The supply is very limited because many of the mother plants are shy seeders. In sending your orders, always indicate a second choice because I expect to be sold out of certain items in a big hurry.

About the Lyondel Oriental Poppies

The Lyondel Hybrid Oriental Poppies have undergone many years' selective breeding. No reds, oranges, or scarlets are used as parent plants. Generation after generation these colors have been carefully rogued in favor of maroons, lavenders, and pinks of all shades; and now a large percentage of the seedlings will come true to color. The size of the flowers, the sturdiness and the length of the stem, and disease resisting qualities have received particular attention.

I have released none of the fine poppies developed in my garden. These are the exclusive parents of seeds which now I am offering to discriminating flower fanciers. Although as yet oriental poppies have made no financial return to me, their

breeding program has been pushed vigorously because their colors have a strange and fascinating effect on me. They have responded nobly, and now I have poppies that are masterpieces both in color and form.

How to Grow Poppies from Seed

Seeds may be sown either in September or early in the spring. Cold frames only should be used because the roots of poppies go very deep. Mix the seeds with some fine dirt to prevent crowding, and sow in rows right on the surface of the seed-bed. Press them down firmly by a piece of 2x4, place two thicknesses of damp cheesecloth over the surface and water thoroughly but gently. Put glass on the frame to prevent rains from beating down the seeds and seedlings, but shade the glass with a piece of burlap. When the seedlings begin to come up, remove the cheesecloth. As it begins to get cooler, remove the burlap. By the time freezing weather arrives, the seedlings will be large enough to winter over very well with glass protection alone. If your seasons are not long enough, sow in the spring. The seedlings should not be disturbed until the following September; then they may be transplanted to a temporary or permanent bed. The newly transplanted seedlings should receive mulch protection the first winter; after that none is necessary.

Success or failure with poppies will depend upon one important factor, namely drainage. On poorly drained lands poppies will be a dismal failure, while on well drained land they will grow like weeds and will be hard to eradicate. Before deciding to grow poppies, you should determine if they can be grown successfully under your climatic conditions.

Seed Offerings For 1945-46

This year the seeds are offered in one group only, a mixture of plum purples, various shades of maroon, different intensities of mauve and lavender selfs, salmon pinks, apple blossom pinks, watermelon pinks, and fused shades rarely if ever seen before. Some reds, oranges, and scarlets are likely to be present among your seedlings, but they will constitute a comparatively small percentage of the lot.

Prices

Two dollars a packet.

